

**MARYLAND DEPARTMENT OF HEALTH**

# **Update on the HIV Epidemic in Maryland**

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**Prevention and Health Promotion Administration  
Center for HIV Surveillance, Epidemiology and Evaluation**

**July 25, 2019**

# Prevention and Health Promotion Administration

## **MISSION AND VISION**

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### **MISSION**

The mission of the Prevention and Health Promotion Administration is to protect, promote and improve the health and well-being of all Marylanders and their families through provision of public health leadership and through community-based public health efforts in partnership with local health departments, providers, community based organizations, and public and private sector agencies, giving special attention to at-risk and vulnerable populations.

### **VISION**

The Prevention and Health Promotion Administration envisions a future in which all Marylanders and their families enjoy optimal health and well-being.

# Data Freeze

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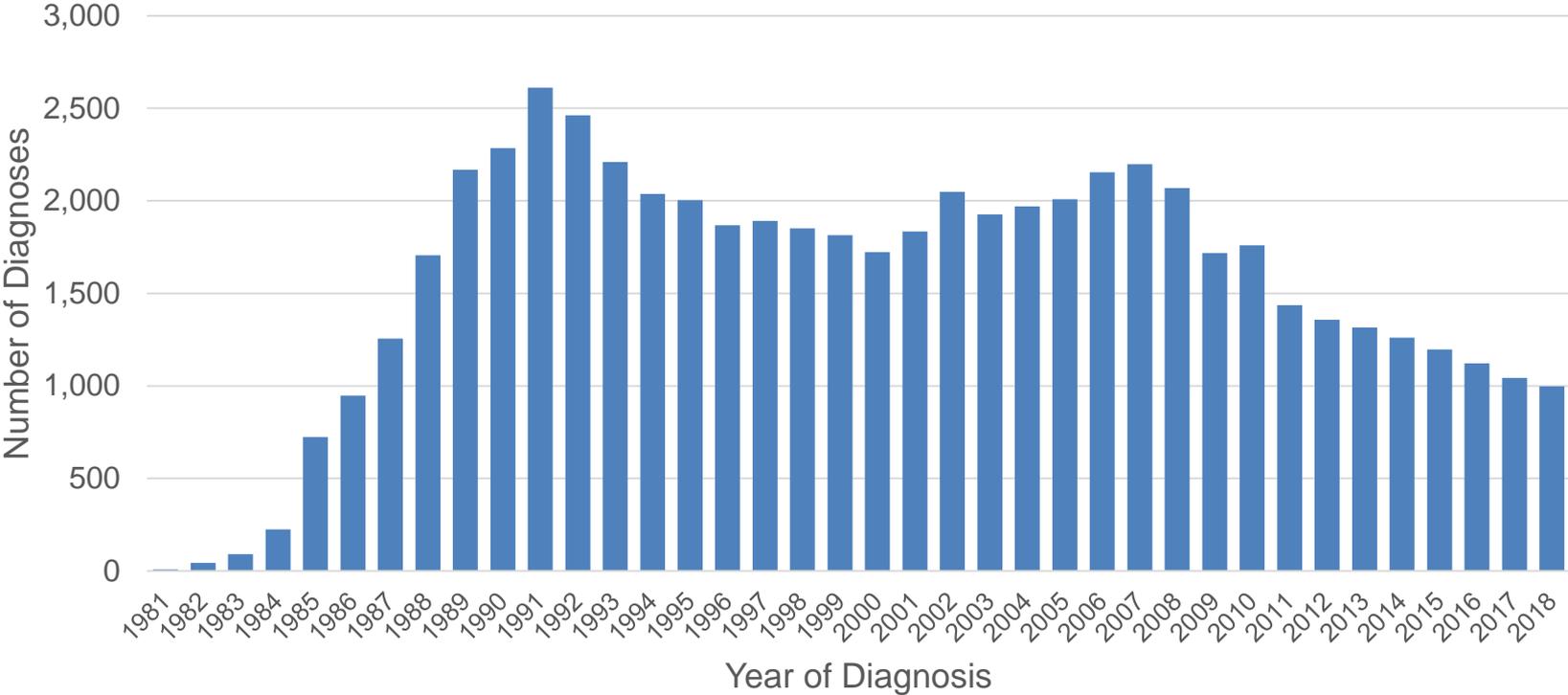
- We allow a six month period to account for
  - Delays in reporting
  - Time to complete investigations
  - Data sharing and de-duplication with neighboring states
- June 30<sup>th</sup> data freeze then subjected to data cleaning and geo-coding (currently underway)
- Use data freeze to produce numbers for new 2018 diagnoses and persons living with an HIV diagnosis on 12/31/2108

# Preliminary 2018 Data

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- **994** new HIV diagnoses in Maryland residents during 2018 (19.6 per 100/000)
- **0** perinatal HIV transmissions in babies born to mothers living in Maryland during 2018
- **507** new AIDS diagnoses in Maryland residents living with diagnosed HIV during 2018
  - 48.9% were also newly diagnosed with HIV
- **31,559** adults/adolescents with a current address in Maryland living with diagnosed HIV on 12/31/2018
  - Estimated **36,611** people living with HIV (13.8% undiagnosed)

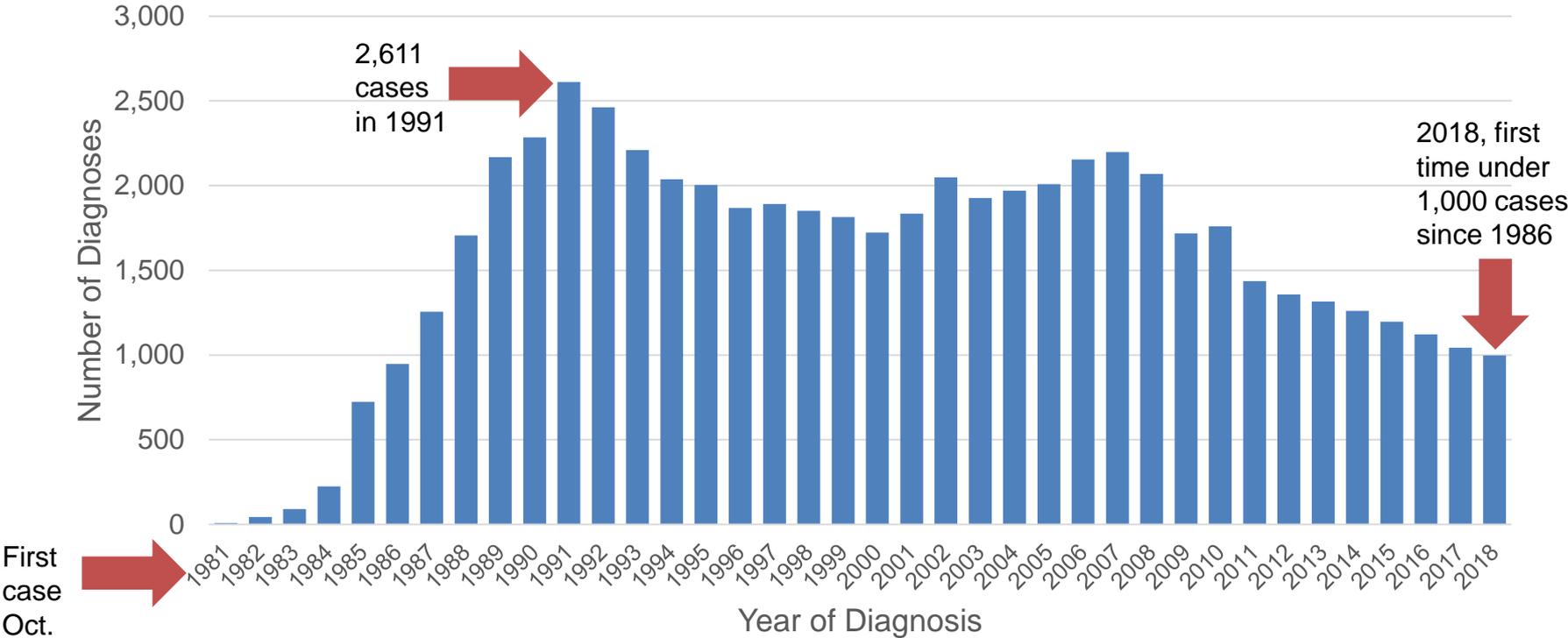
# HIV Diagnoses by Year of Diagnosis



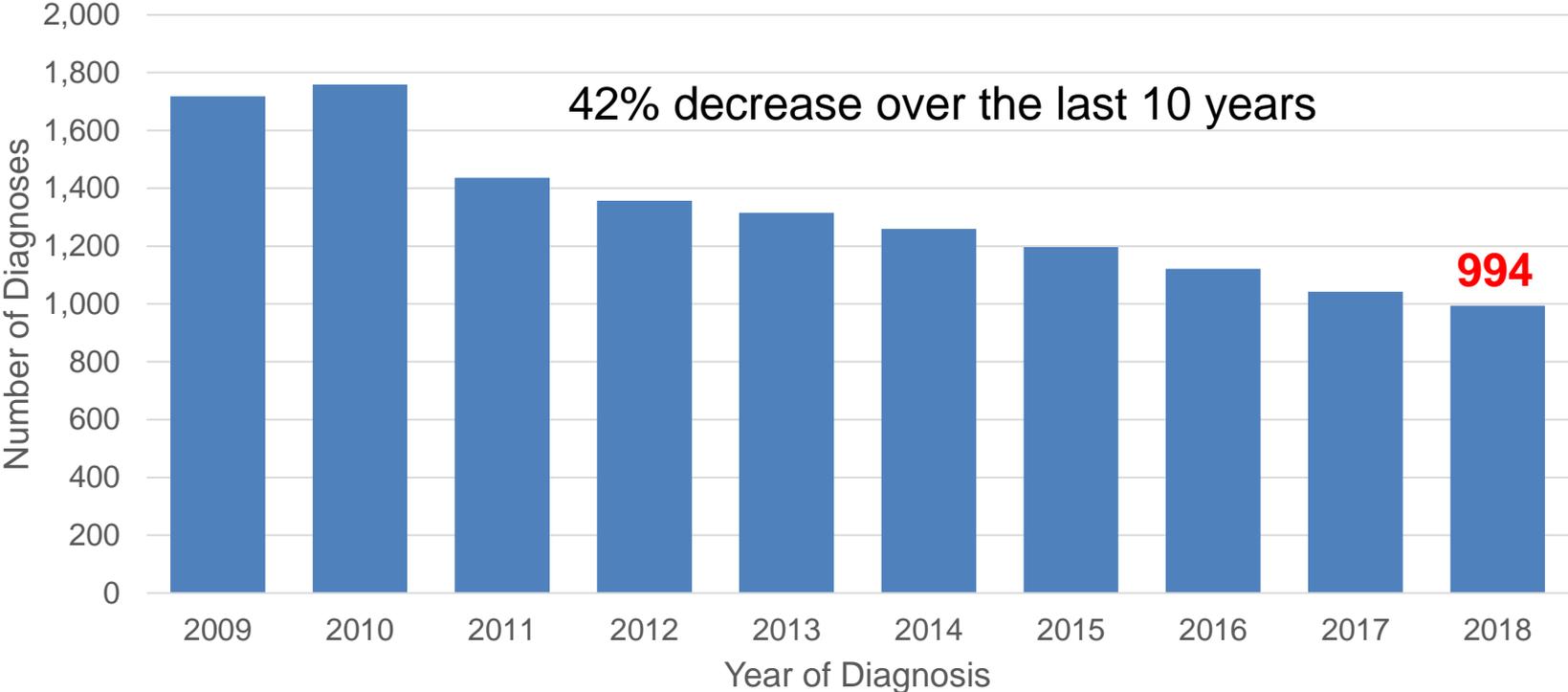
5 Using data as reported through 6/30/2019



# HIV Diagnoses by Year of Diagnosis

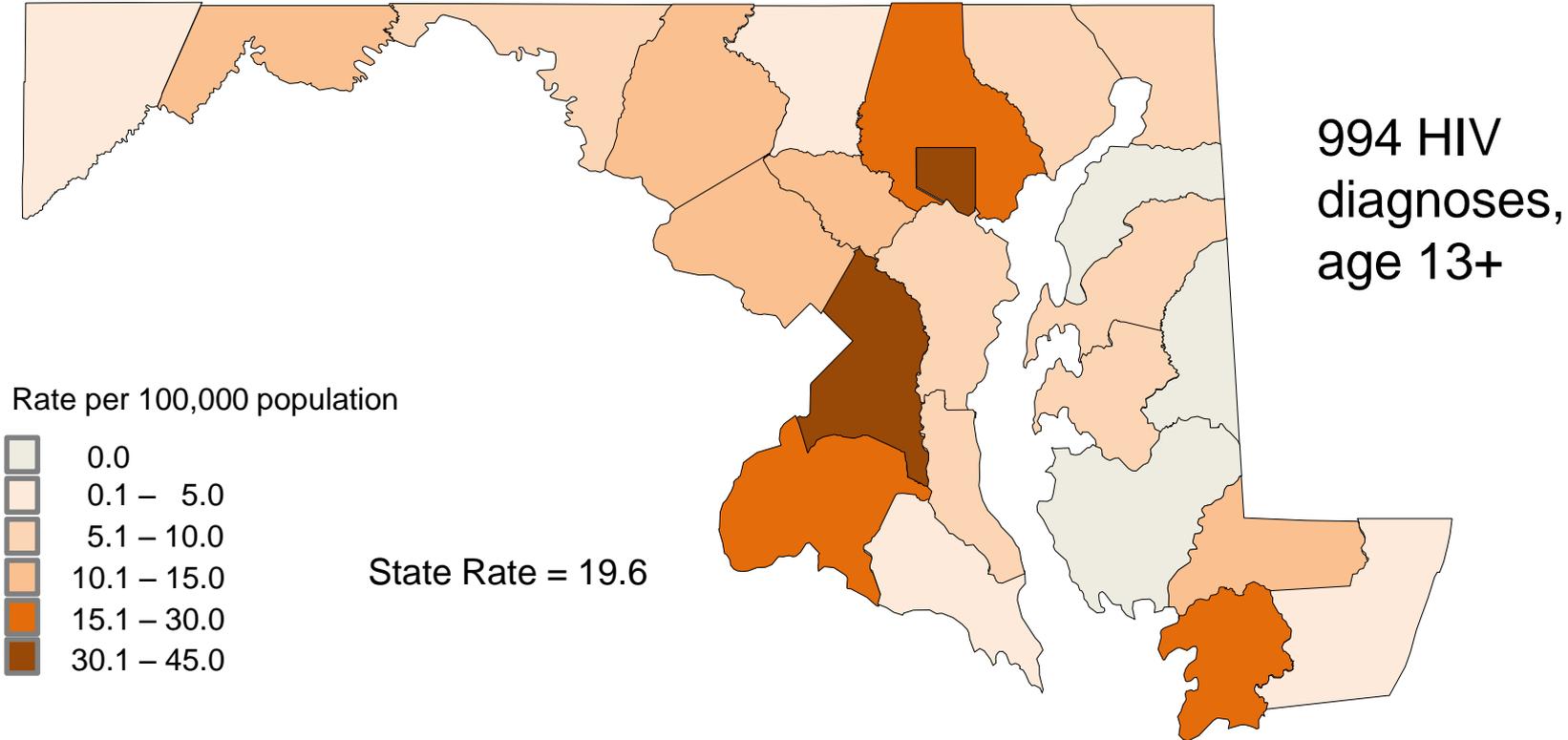


# HIV Diagnoses by Year of Diagnosis



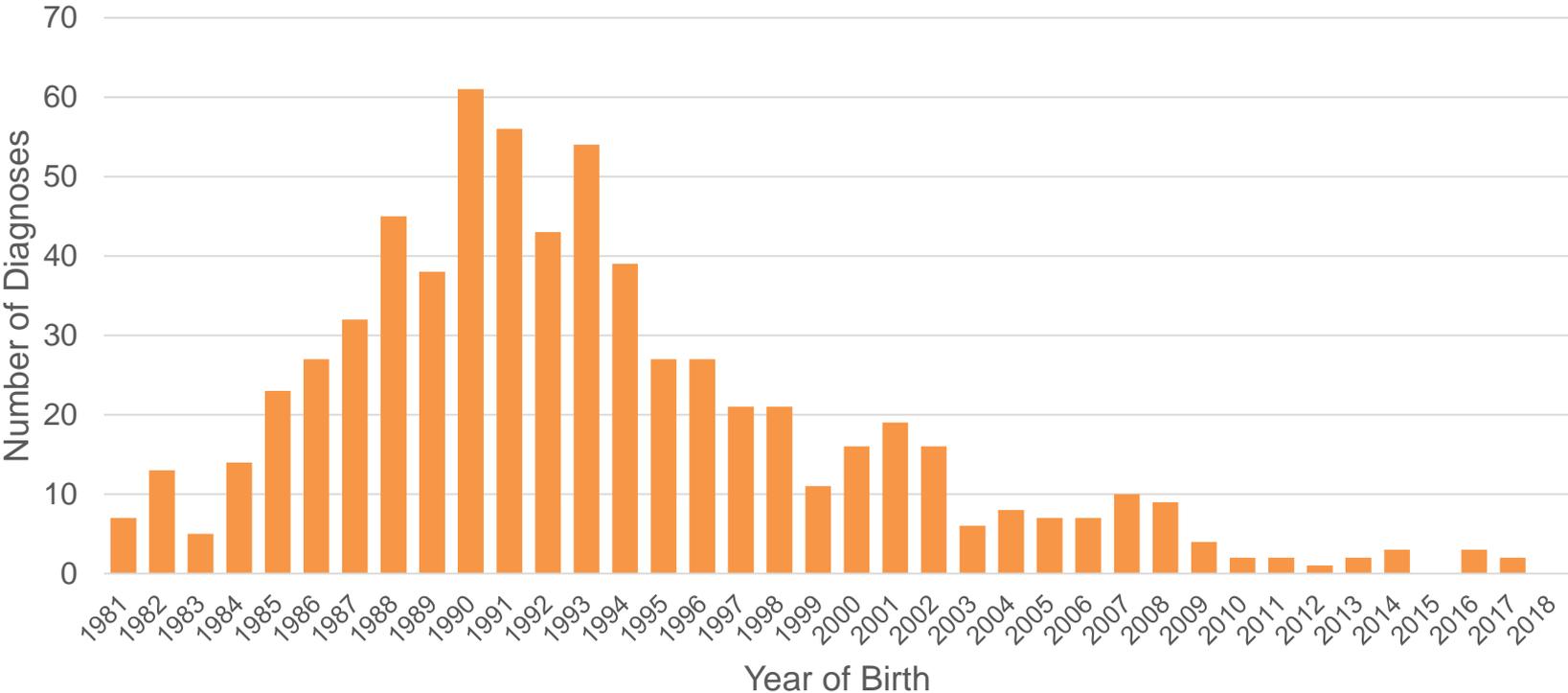
7 Using data as reported through 6/30/2019

# 2018 HIV Diagnosis Rates by Jurisdiction



8 Using data as reported through 6/30/2019

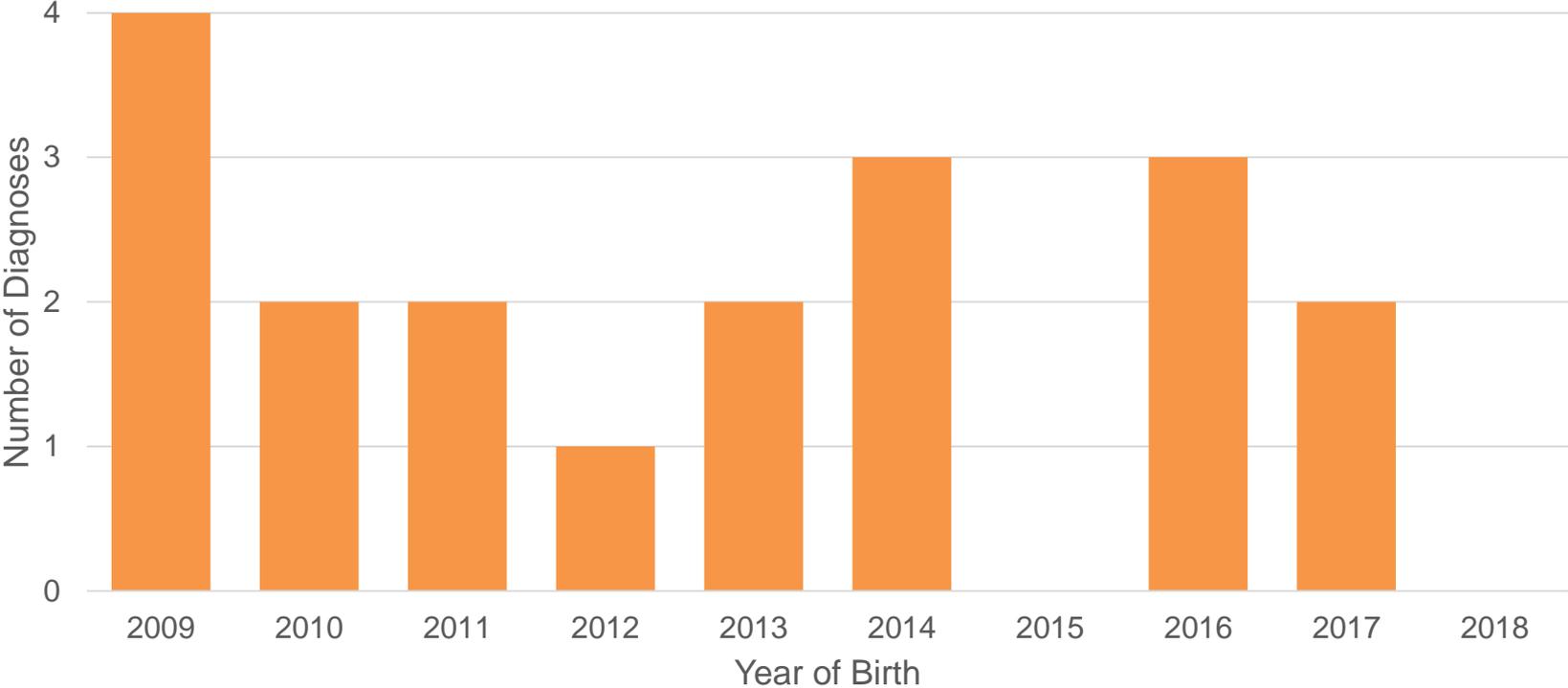
# Pediatric HIV Diagnoses by Year of Birth



9 Using data as reported through 6/30/2019



# Pediatric HIV Diagnoses by Year of Birth



10 Using data as reported through 6/30/2019

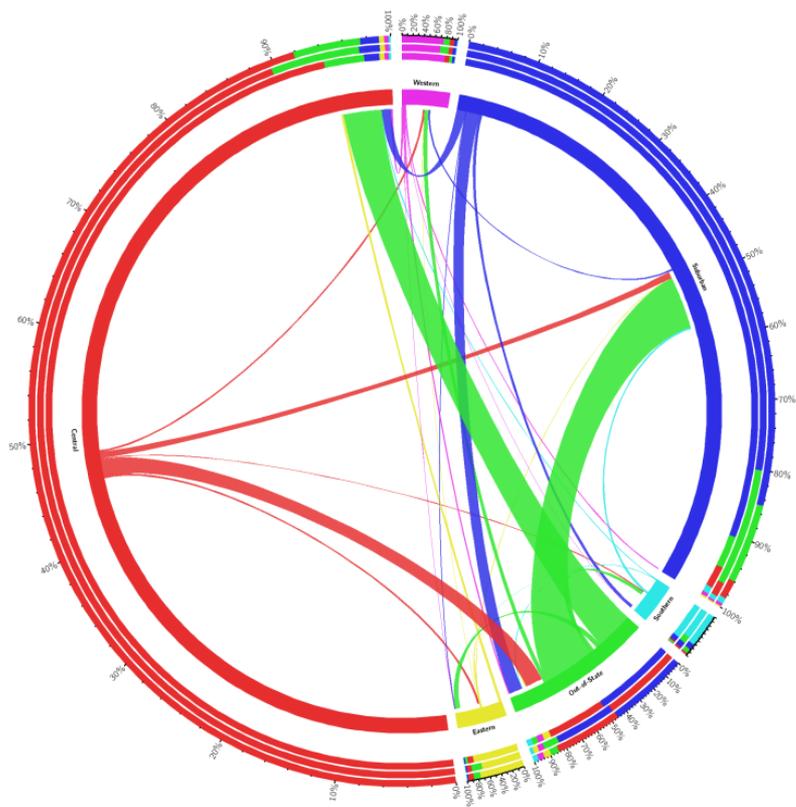


# Eliminating Perinatal HIV Transmission

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- There were three babies diagnosed with HIV in Maryland and born in 2017
- Only one baby was identified for 2018
- None of these four babies were born in a Maryland hospital
- Only one of the mothers lived in Maryland at the time of birth
- Only two of these babies are being counted as Maryland cases
- Elimination: <1 transmission per 100,000 live births
- Maryland had 71,589 live births in 2017

# Migration



Migration of persons living with diagnosed HIV from time of first diagnosis to current residence, between Maryland planning regions

red=Central

blue=Suburban

green=out of state

# Migration

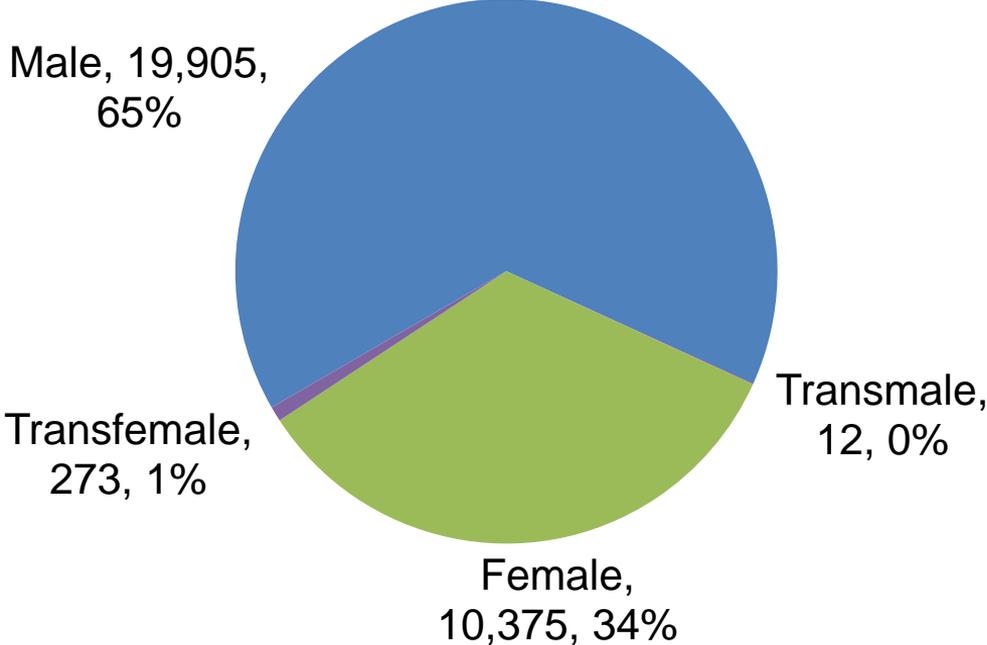
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- During 2017 there were 2,340 new people with HIV identified in Maryland
- However, there were only 1,043 new HIV diagnoses in Maryland residents
- The other 1,297 people (55%) either moved to Maryland after diagnosis or came to Maryland for medical care

# HIV Prevalence by Gender

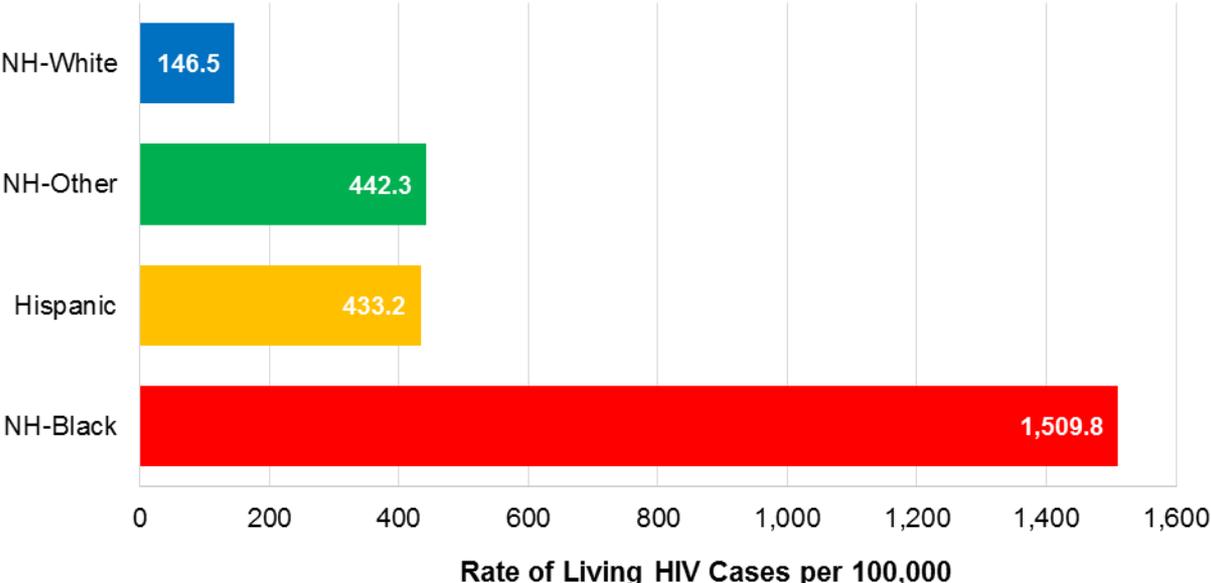
Adult/Adolescent HIV Diagnoses, Current Address in Maryland and Alive on 12/31/2017, Current Gender, Reported through 6/30/2018

N = 30,566



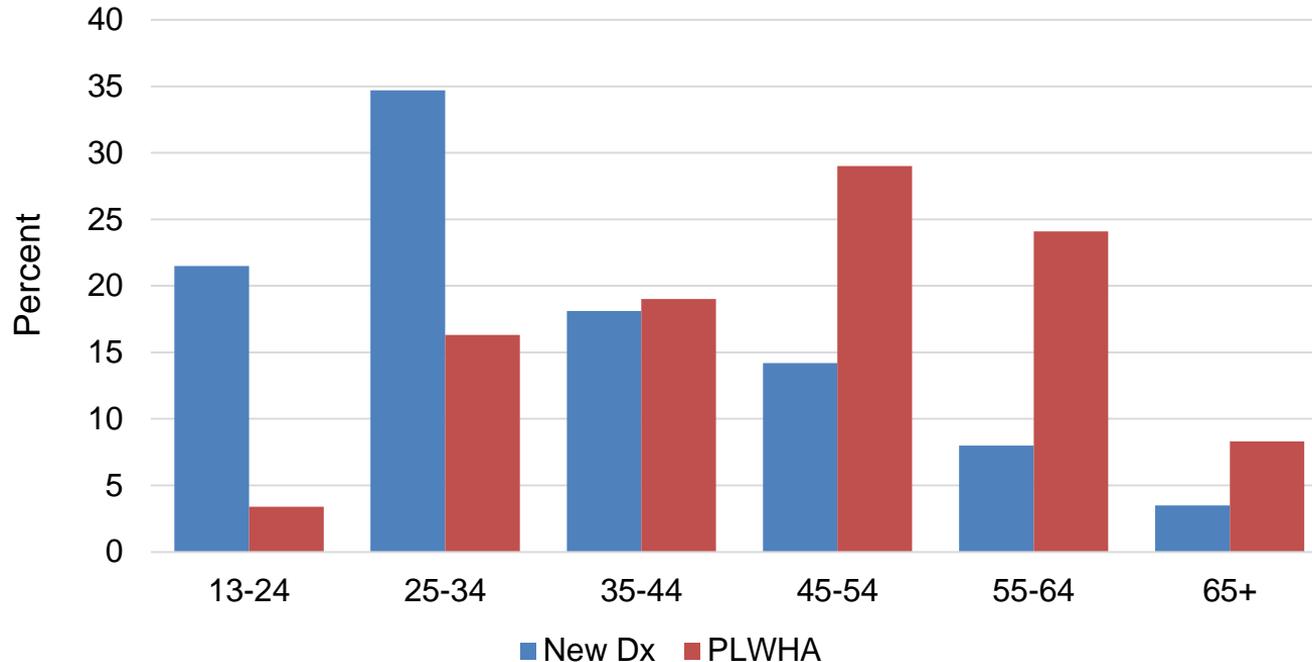
# HIV Prevalence by Race/Ethnicity

Adult/Adolescent HIV Diagnoses, Current Address in Maryland and Alive on 12/31/2017, Rates per 100,000 by Race/Ethnicity, Reported through 6/30/2018



# HIV Incidence and Prevalence by Age Group

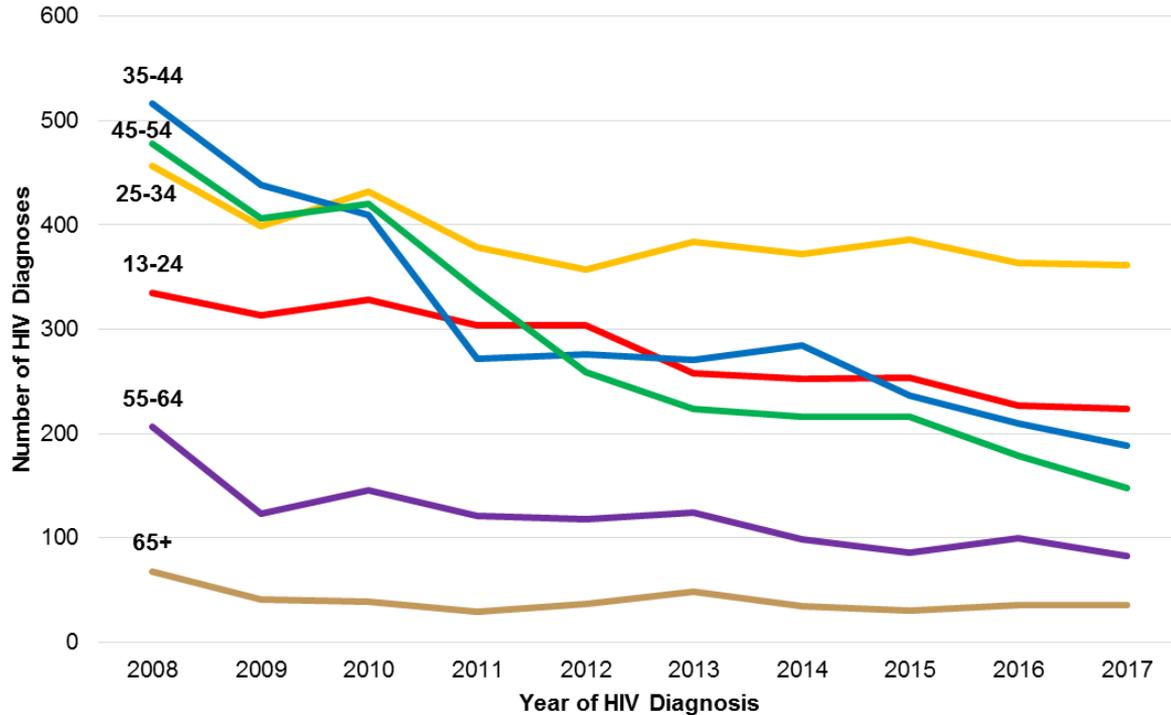
Age at Diagnosis of New 2017 HIV Diagnoses versus Age on 12/31/2017 of Persons Living with Diagnosed HIV or AIDS



PLWH are aging with HIV, while the new HIV diagnoses are getting younger

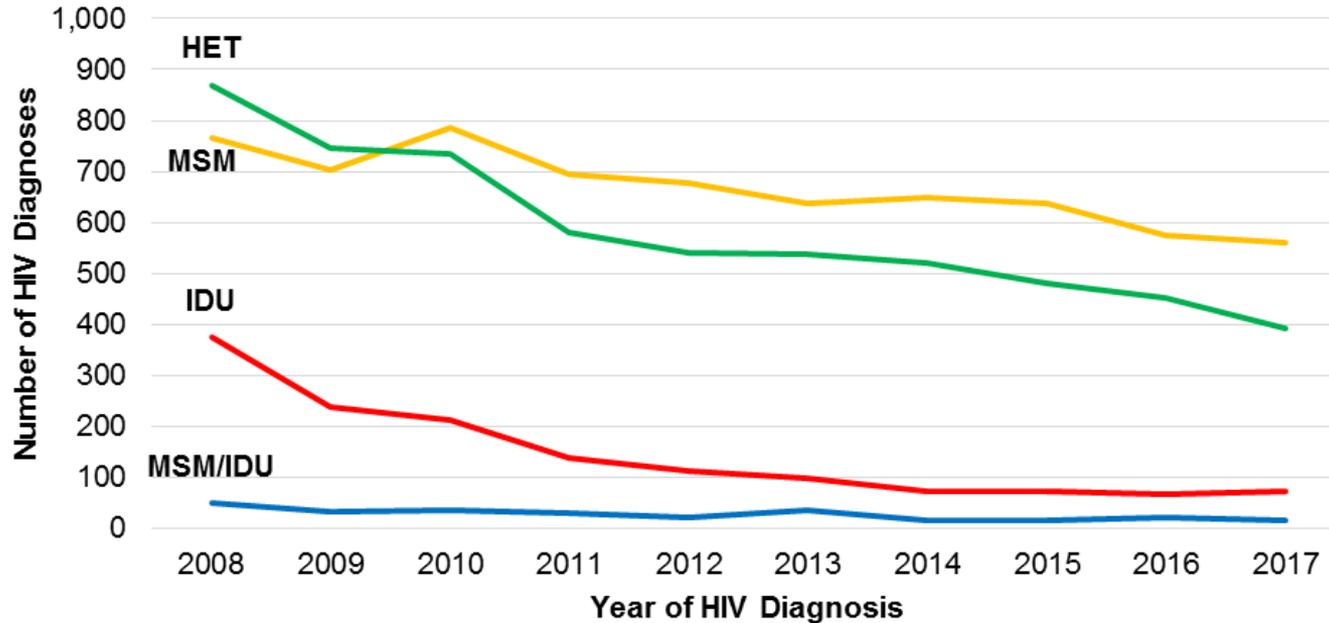
# HIV Diagnosis Age Trends

Trends in Maryland Adult/Adolescent Diagnoses by Age at Diagnosis, 2008-2017, Reported through 06/30/2018



# HIV Diagnosis Exposure Trends

Trends in Maryland Adult/Adolescent HIV Diagnoses by Exposure Category, 2008-2017, Reported through 06/30/2018

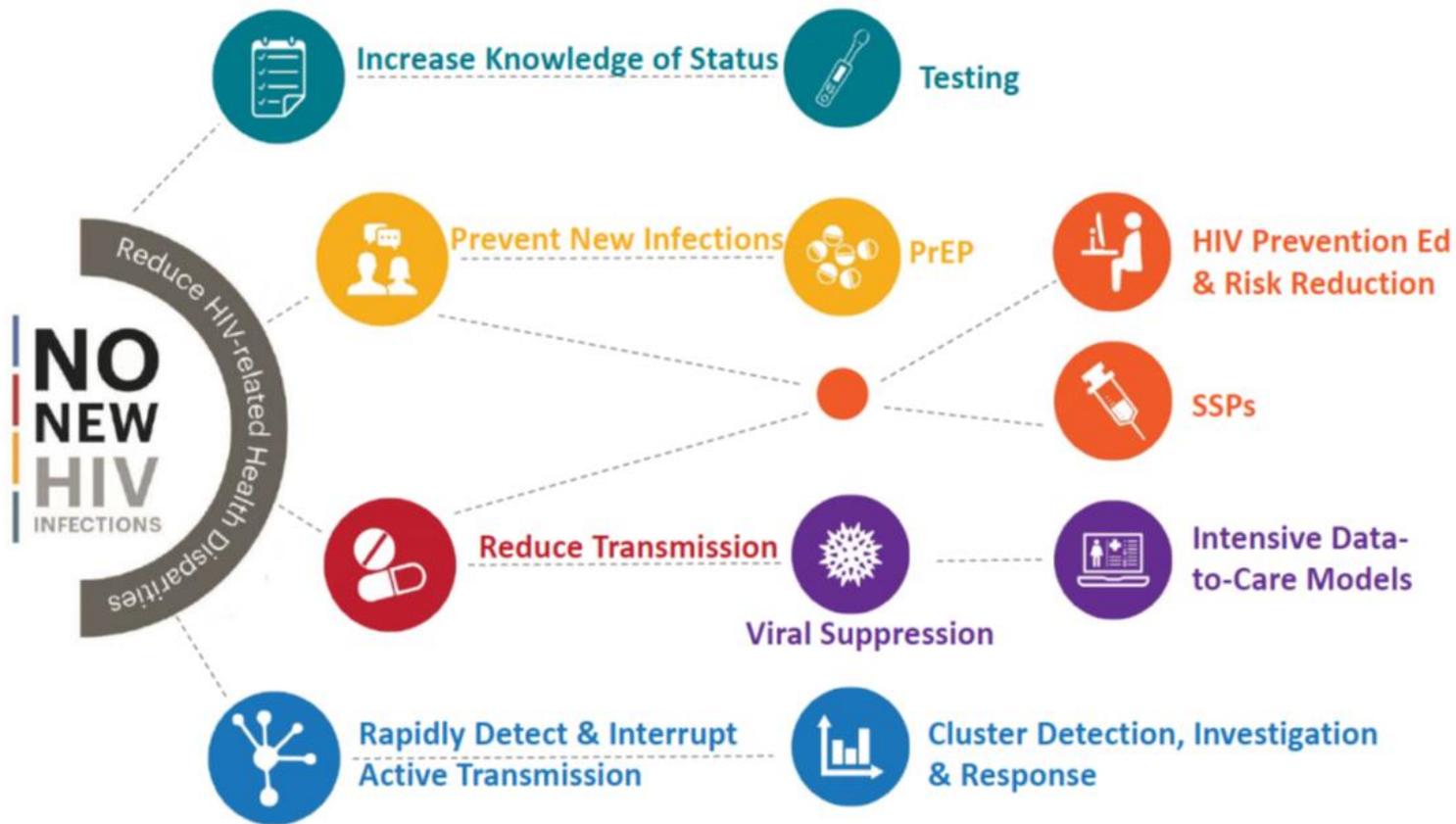


# Maryland HIV Plan

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General Population	Vulnerable Populations	Full Diagnosis of HIV Infection	Care Engagement	Viral Suppression
<p><i>Educate</i> all Marylanders to heighten HIV awareness and reduce stigma.</p>	<p><i>Protect</i> individuals and communities at highest risk for HIV infection in Maryland.</p>	<p><i>Diagnose</i> all Marylanders living with HIV who are unaware of their HIV status.</p>	<p><i>Engage</i> all Marylanders living with HIV in high quality HIV care.</p>	<p><i>Achieve</i> viral suppression for all Marylanders living with HIV.</p>

# CDC PS18-1802: Integrated HIV Surveillance and Prevention Programs for Health Departments



# Ending the HIV Epidemic

## A Plan for America – Feb. 2019

### GOAL:

**75%**  
reduction  
in new HIV  
infections  
in 5 years  
and at least  
**90%**  
reduction  
in 10 years.



Our goal is ambitious and the pathway is clear – employ strategic practices in the *places* focused on the right *people* to:



**Diagnose** all people with HIV as early as possible after infection.

**Treat** the infection rapidly and effectively to achieve sustained viral suppression.



**Protect** people at risk for HIV using potent and proven prevention interventions, including PrEP, a medication that can prevent HIV infections.

**Respond** rapidly to detect and respond to growing HIV clusters and prevent new HIV infections.



**HIV HealthForce** will establish local teams committed to the success of the Initiative in each jurisdiction.



# Ending the HIV Epidemic

## A Plan for America – Feb. 2019

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The Initiative will target our resources to the 48 highest burden counties, Washington, D.C., San Juan, Puerto Rico, and 7 states with a substantial rural HIV burden.



Includes Baltimore City,  
Montgomery County, Prince  
George's County, and the  
District of Columbia

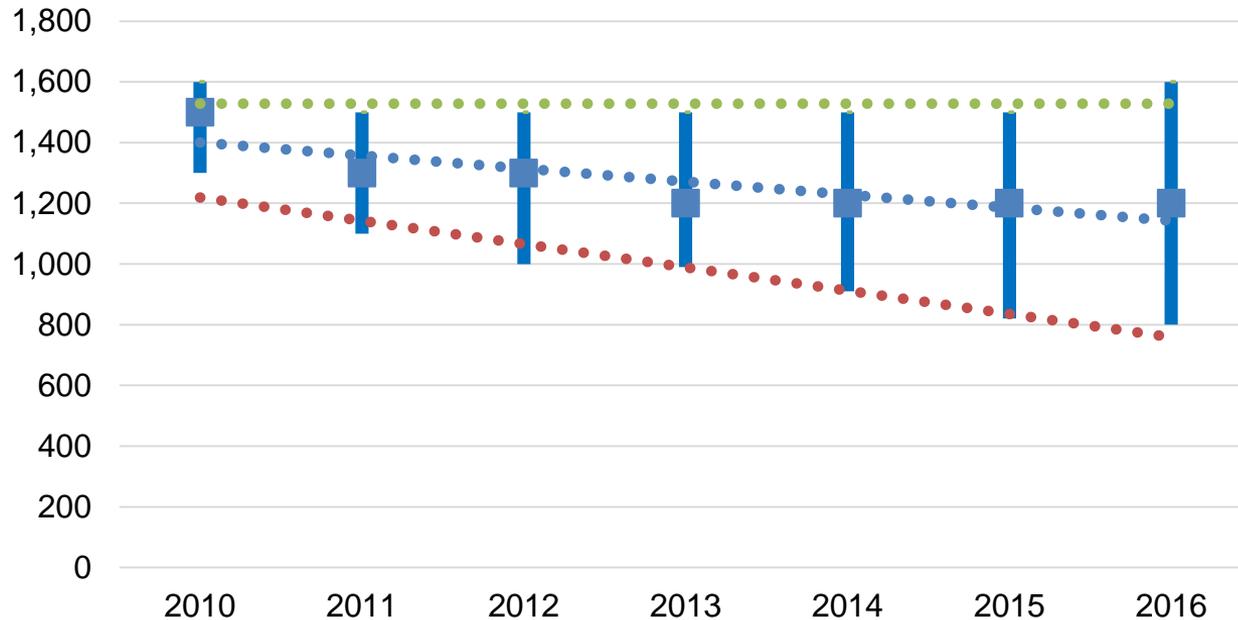
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# HIV Incidence Trends

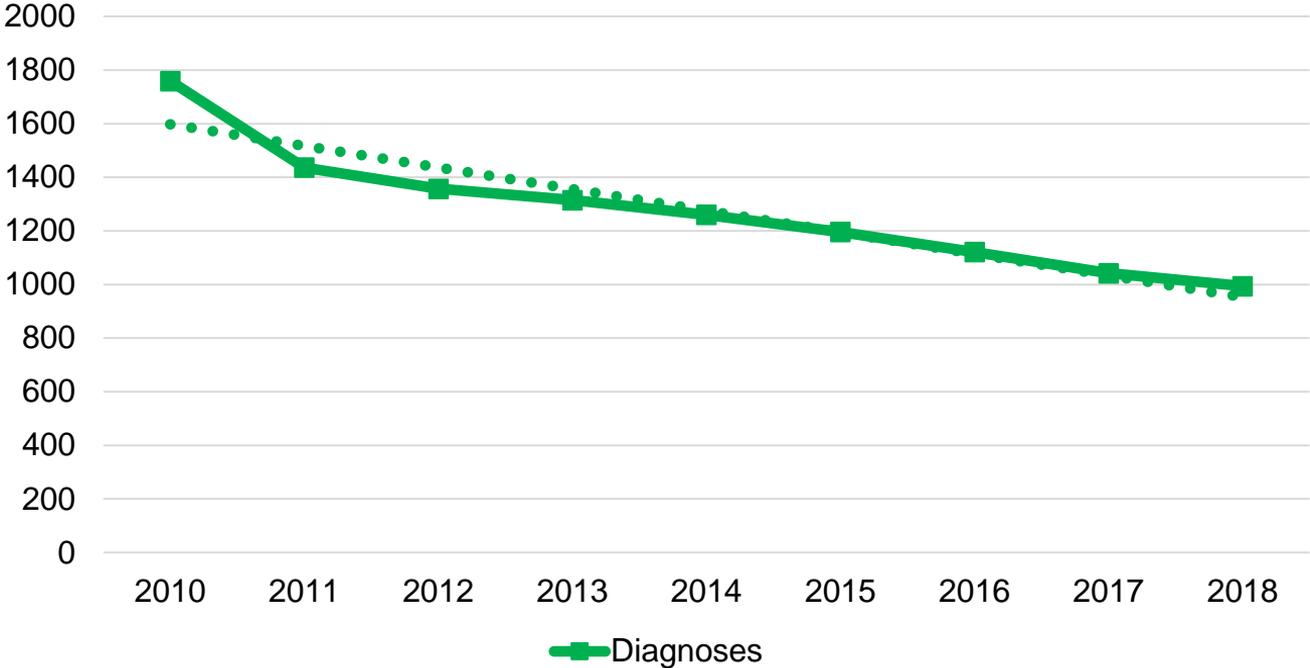
Estimated HIV Incidence for Maryland  
With 95% Confidence Intervals



Estimated HIV incidence in Maryland decreased 20% from 1,500 in 2010 to 1,200 in 2016

# HIV Diagnosis Trends

## New HIV Diagnoses for Maryland



New diagnoses continue to trend downward, from 1,759 in 2010 to 994 in 2018 (43%)

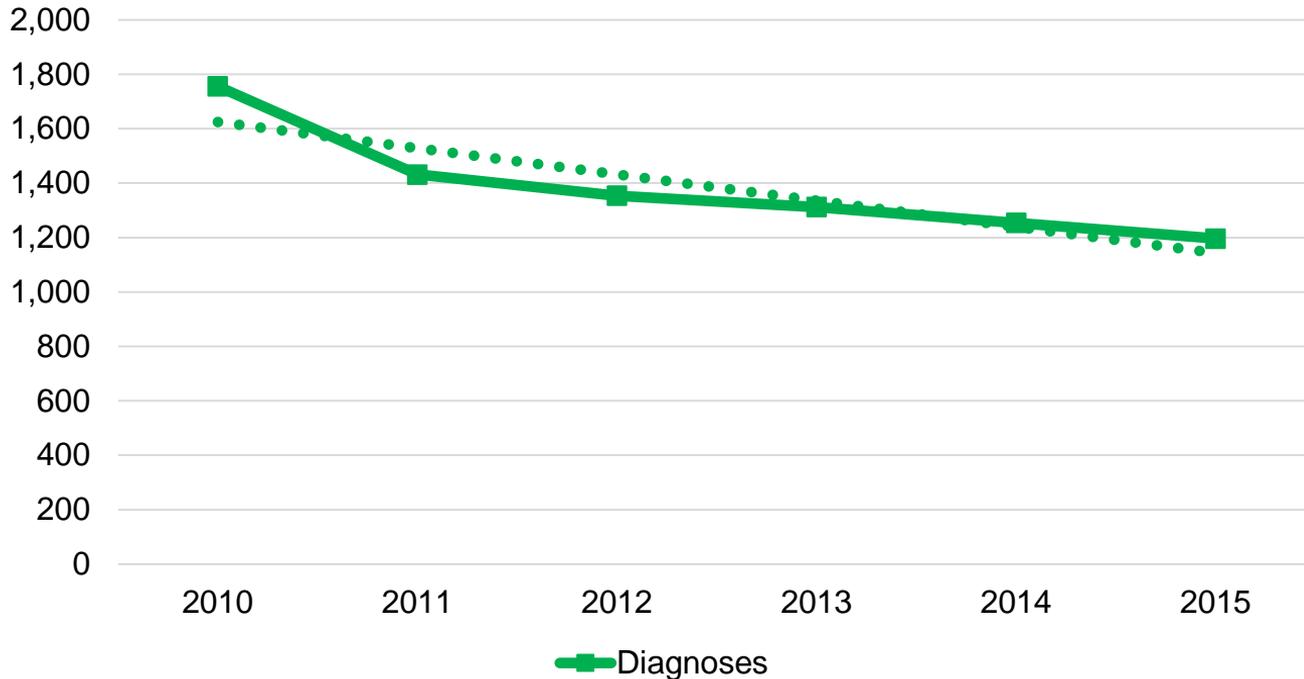
# Incidence or Diagnoses

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- We use new diagnoses as a proxy for incidence (new infections)
- Highly correlated
- Counts versus estimates
- More recent numbers available
- Able to perform analyses on subpopulations and geographies

# 2010 National HIV/AIDS Strategy

New HIV Diagnoses for Maryland

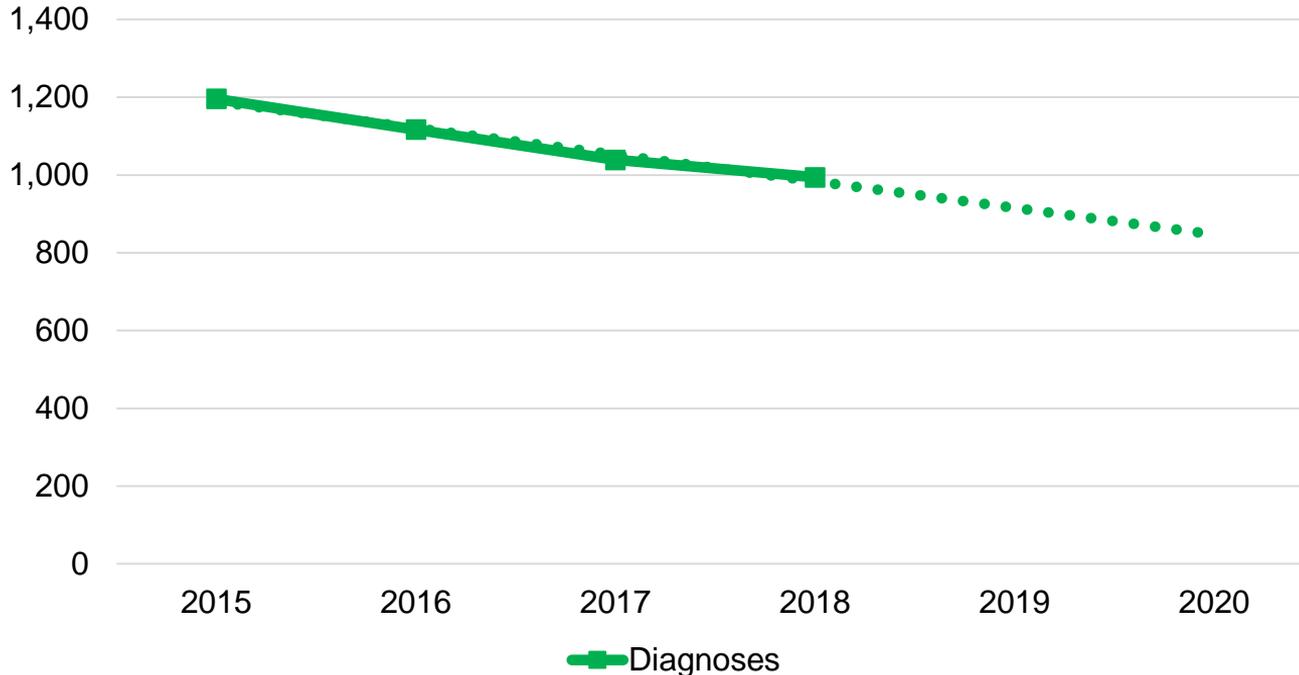


2010 NHAS called for a 25% reduction by 2015.

New HIV diagnoses decreased 32%, from 1,756 in 2010 to 1,196 in 2015

# 2015 National HIV/AIDS Strategy Update

## New HIV Diagnoses for Maryland

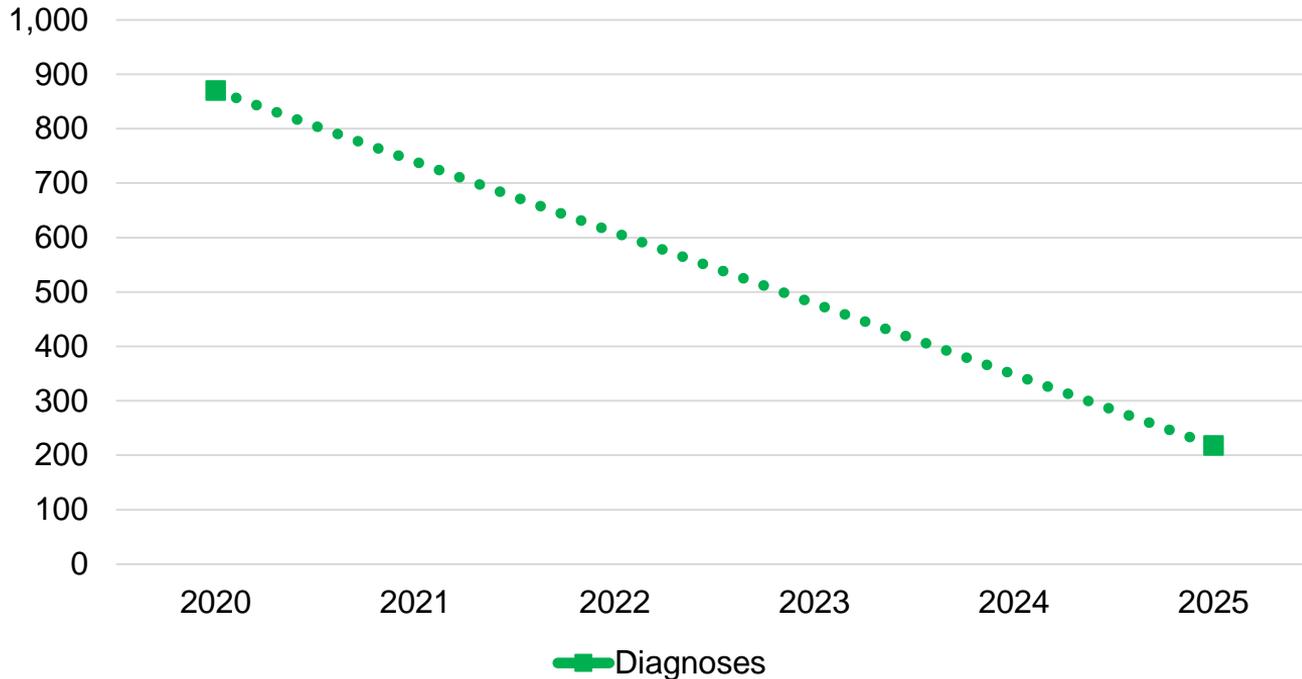


2015 NHAS Update called for a 25% reduction by 2020.

New HIV diagnoses are on track to decrease 27%, from 1,196 in 2015 to 870 by 2020

# 2019 Ending the HIV Epidemic – Phase 1

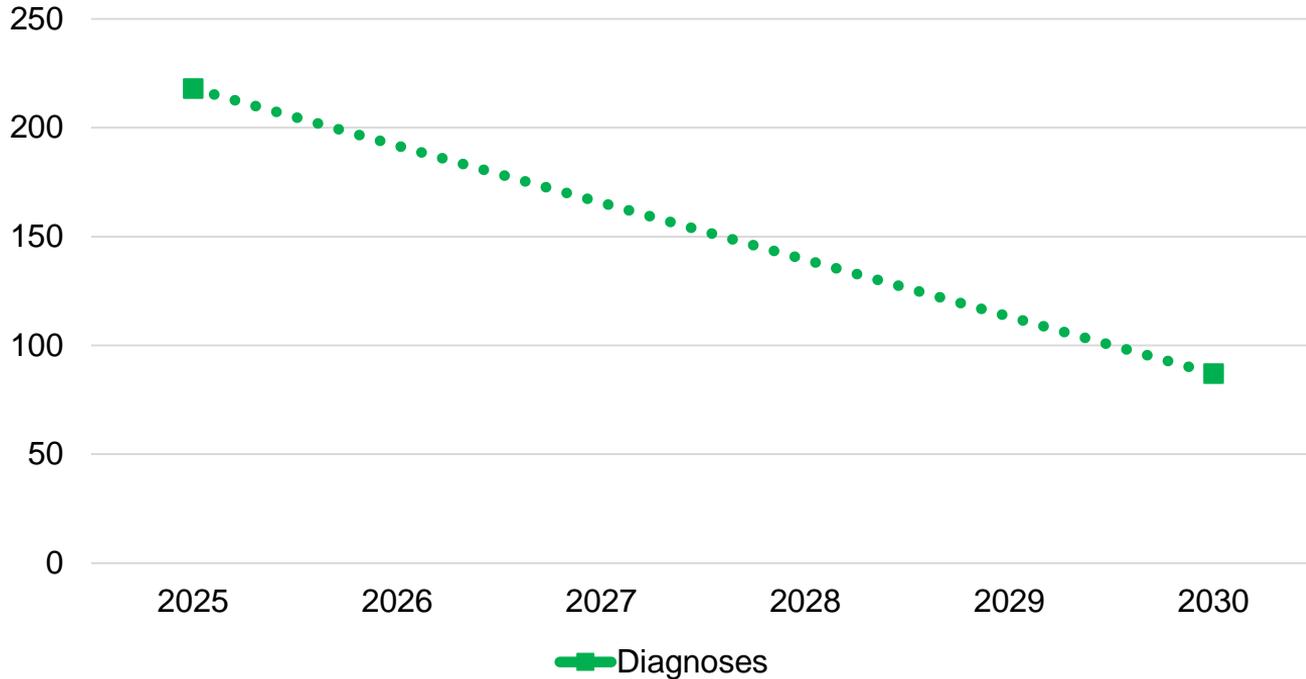
New HIV Diagnoses for Maryland



EtHE calls for a 75% reduction by 2025, from the projected 870 in 2020 to 218 by 2025

# 2019 Ending the HIV Epidemic – Phase 2

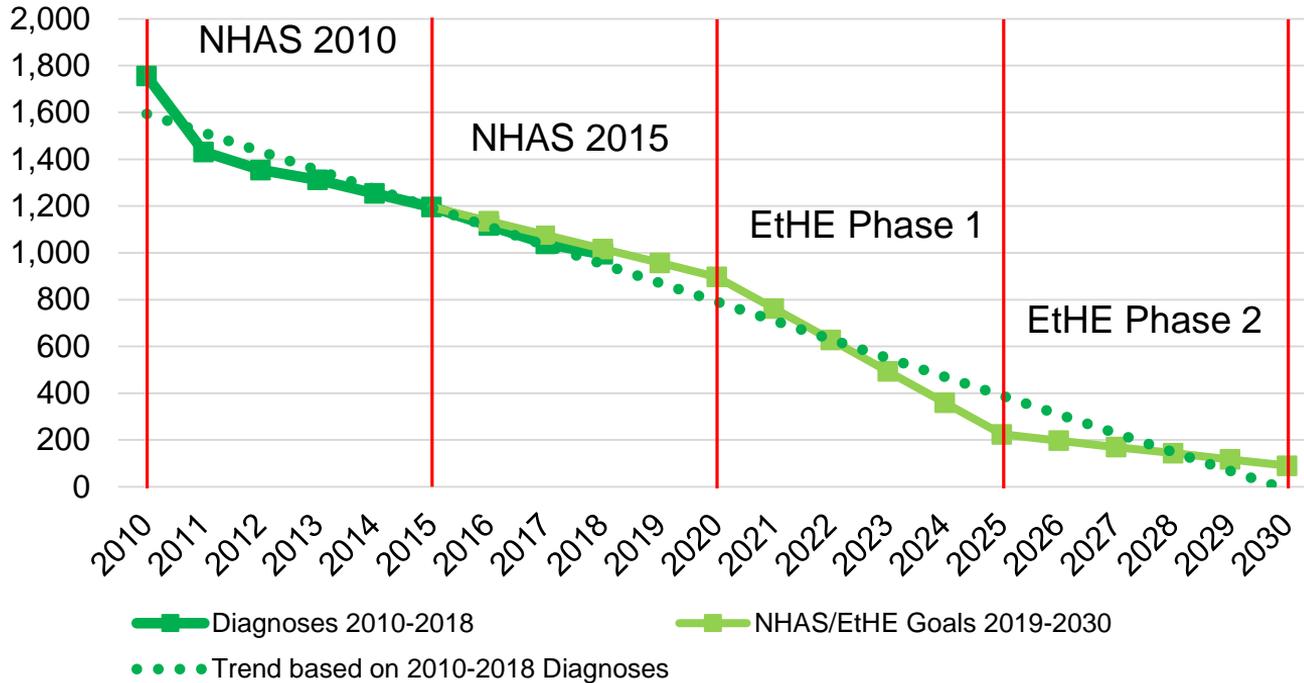
New HIV Diagnoses for Maryland



EtHE calls for a total reduction of 90% from 2020 to 2030, which requires a further reduction from the projected 218 in 2025 to 87 by 2030

# HIV Diagnoses Projected to 2030

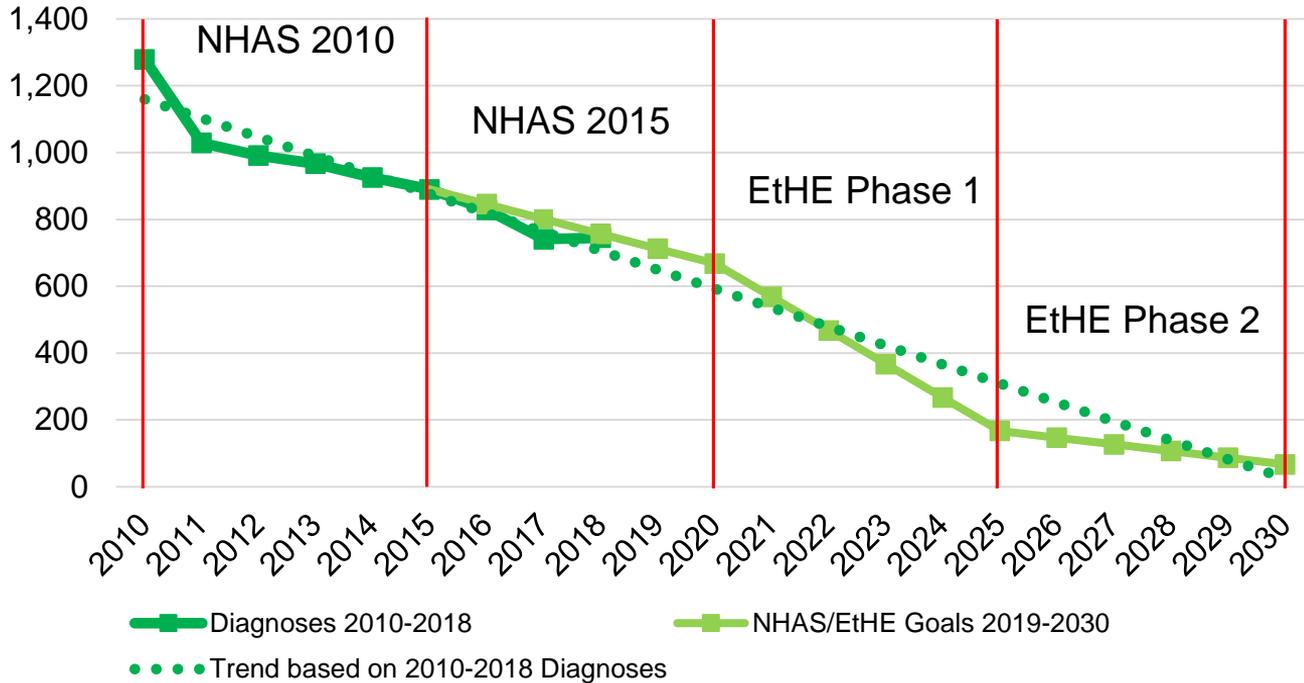
## New HIV Diagnoses for Maryland



Current trends (2010-2018) have Maryland meeting the EtHE 2030 goal by 2029

# HIV Diagnoses Projected to 2030

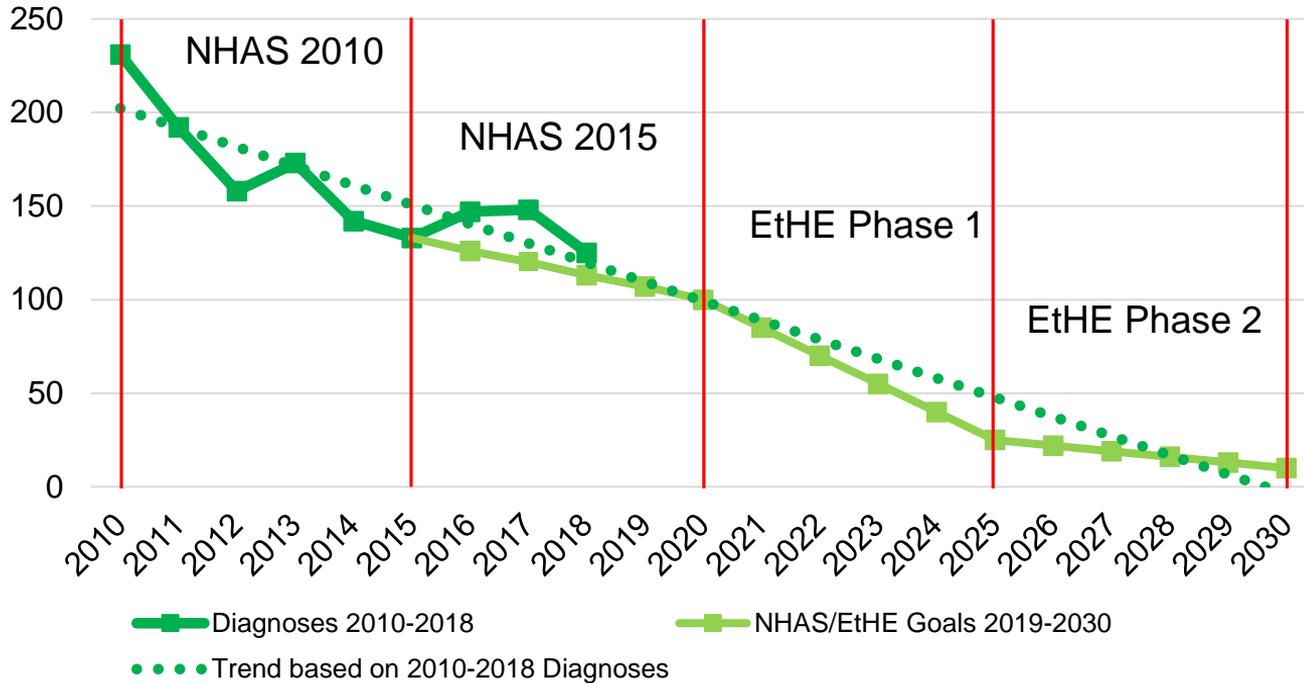
New Black HIV Diagnoses for Maryland



Current trends (2010-2018) have Maryland meeting the EtHE 2030 goal for Blacks by 2029

# HIV Diagnoses Projected to 2030

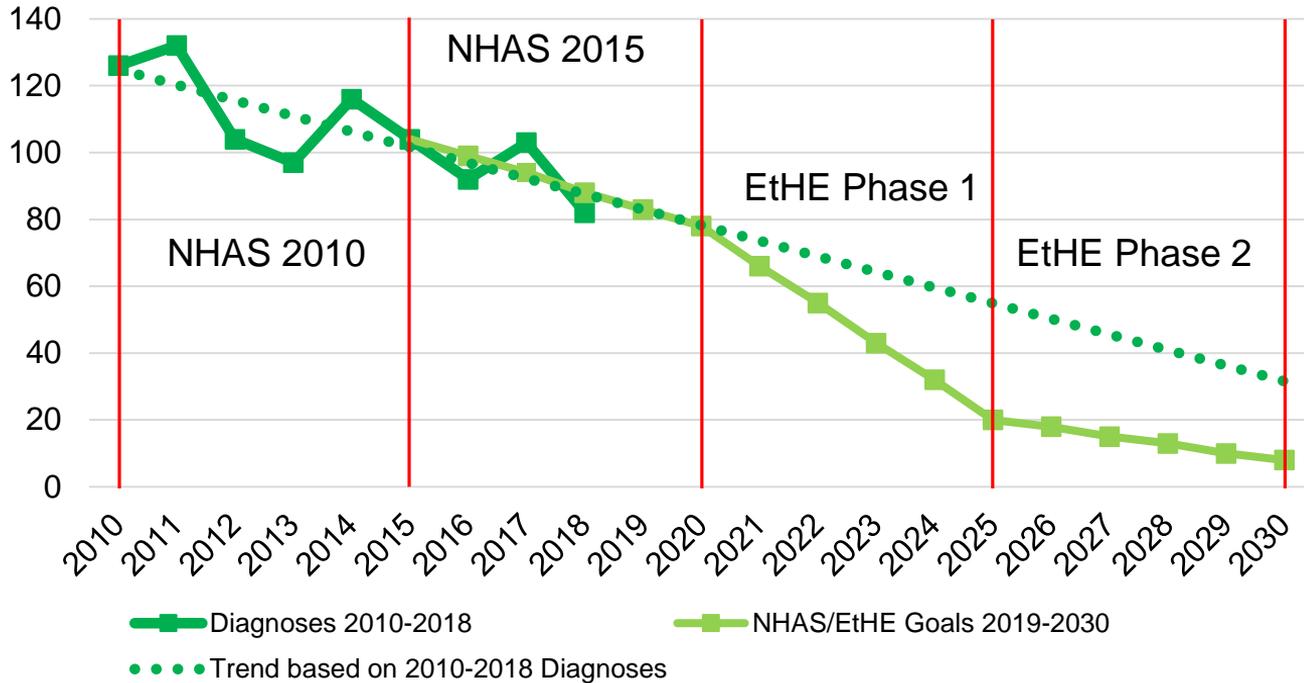
New White HIV Diagnoses for Maryland



Current trends (2010-2018) have Maryland meeting the EtHE 2030 goal for Whites by 2028

# HIV Diagnoses Projected to 2030

New Hispanic HIV Diagnoses for Maryland



Current trends (2010-2018) do not have Maryland meeting the EtHE 2030 goal for Hispanics



**Diagnose** all people with HIV as early as possible after infection.

# CDC HIV Prevalence Estimates



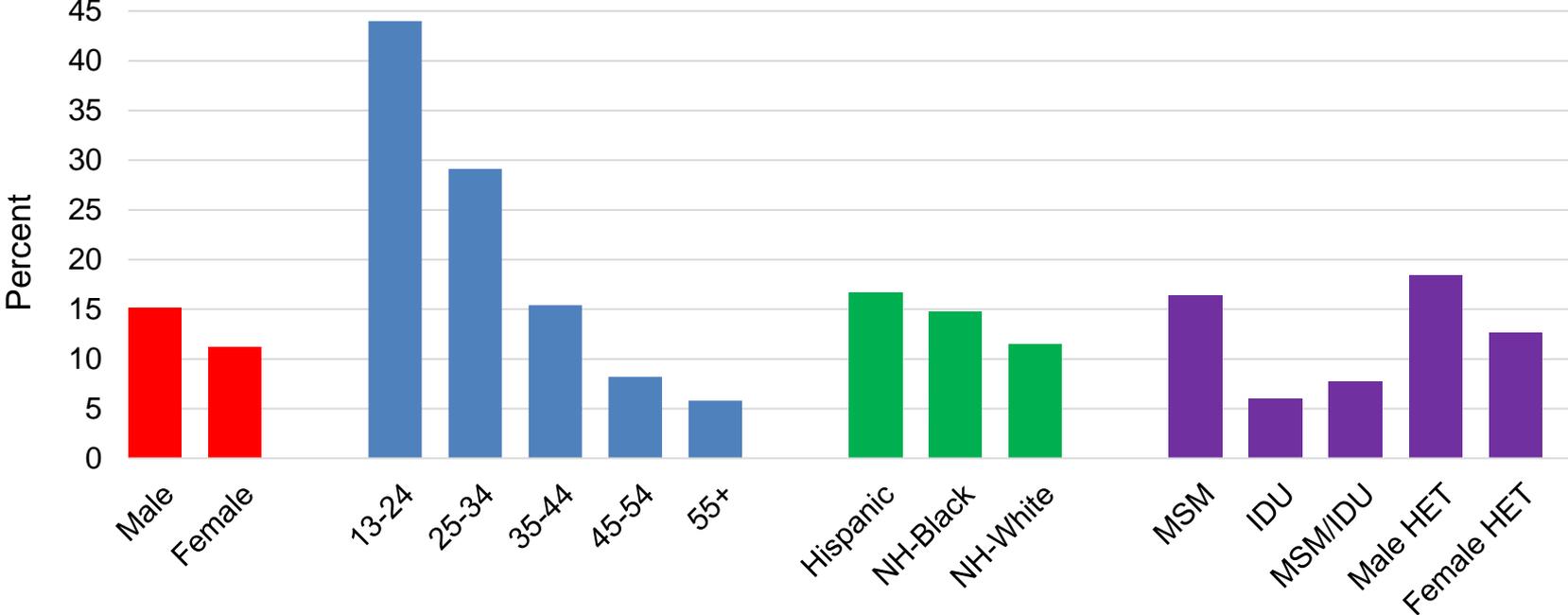
Volume 24, Number 1

**Estimated HIV Incidence and  
Prevalence in the United States  
2010–2016**

Age 13+	United States	Maryland
Persons Living with HIV on 12/31/2016	1,140,400	37,200
Percent Undiagnosed	14.2%	13.8%

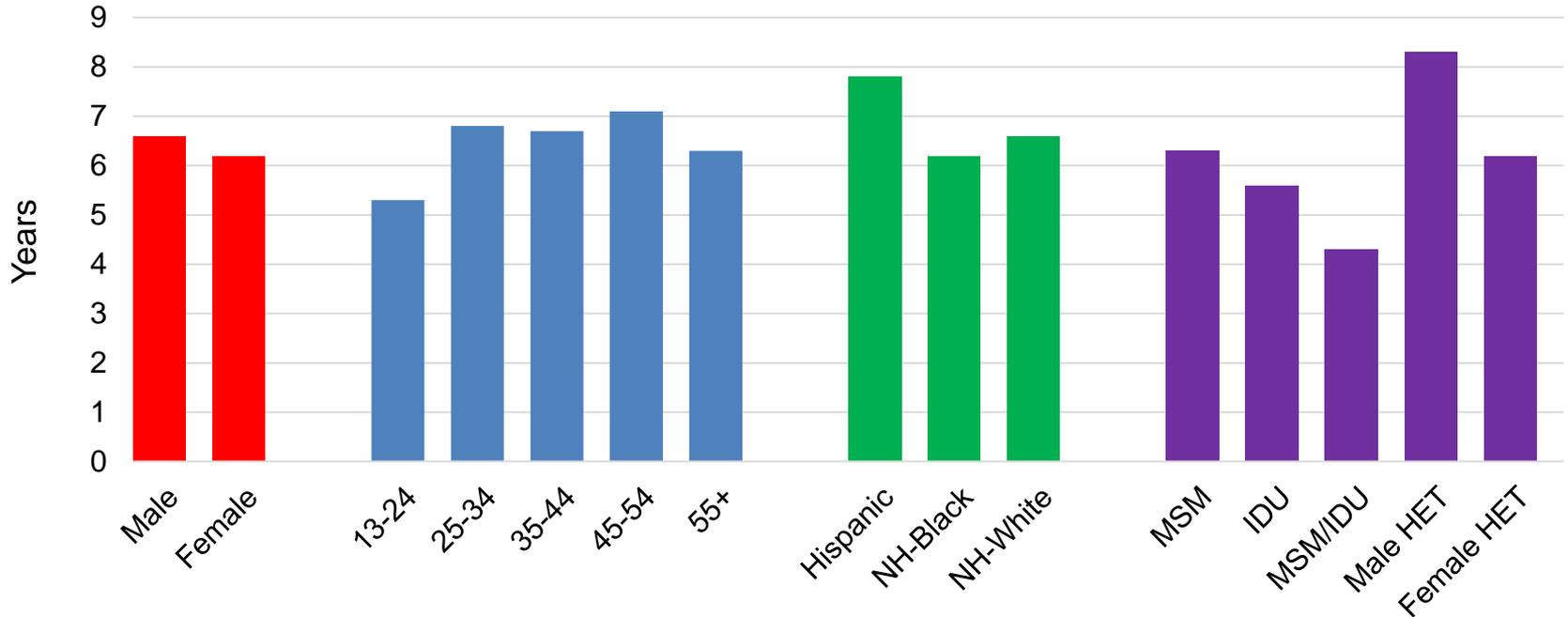
# Estimated Percent Undiagnosed

Estimated Percent HIV Undiagnosed, United States, 2016  
Total = 14.2%



# Estimated Time to Diagnosis

Estimated Time from HIV Infection to Diagnosis, Maryland, 2016  
Total = 6.7 years



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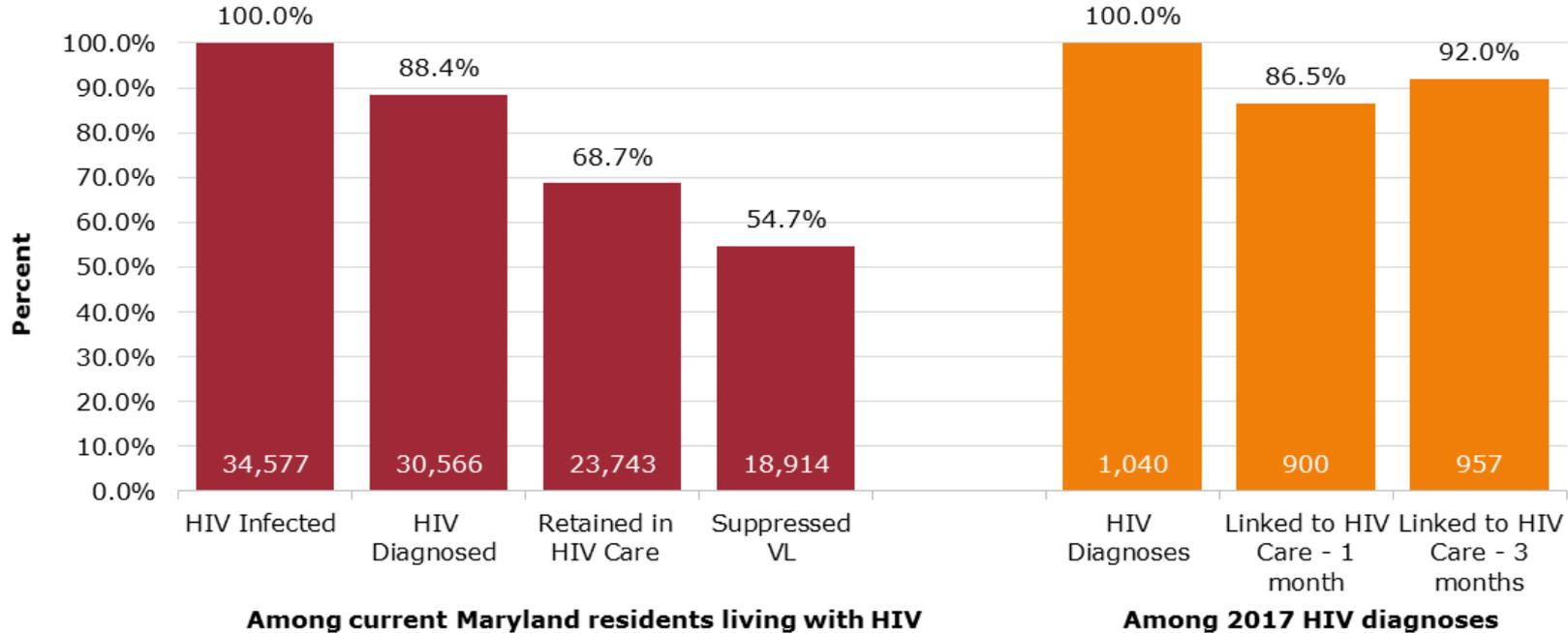
**Treat** the infection rapidly and effectively to achieve sustained viral suppression.



# Continuum of Care Maryland, 2017

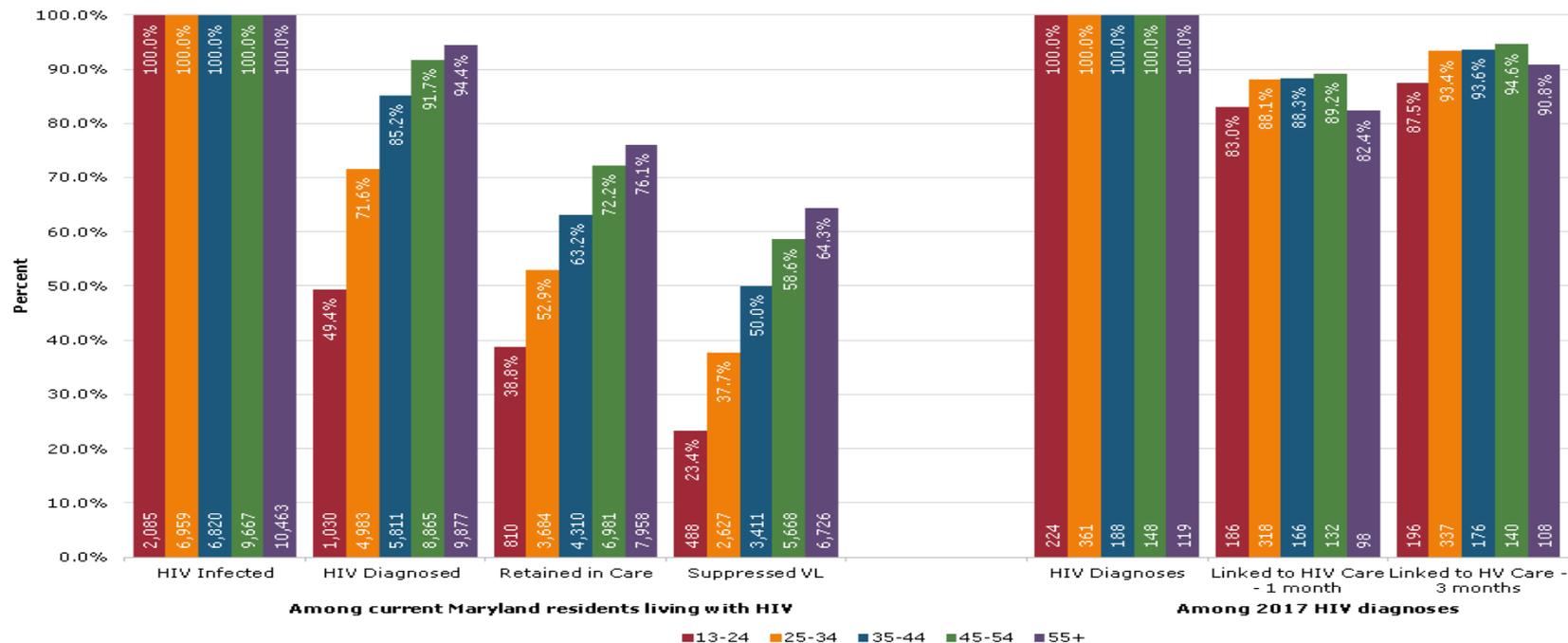
**Preliminary for 2018: 67% virally suppressed and 83% linked in 1 mo.**

Prevalence-Based Estimated Adult/Adolescent HIV Continuum of Care, 2017

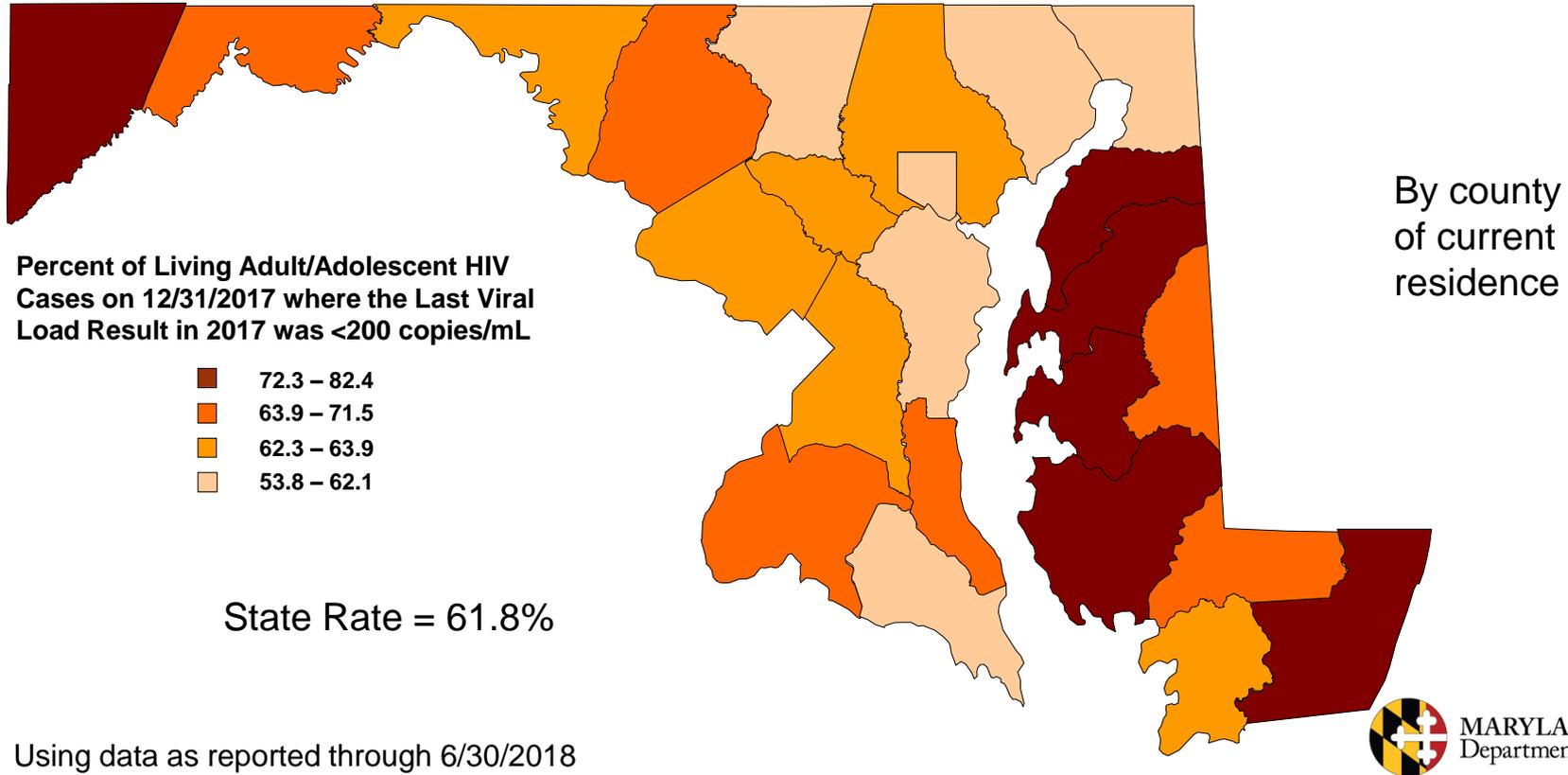


# Continuum of Care by Age Group Maryland, 2017

Prevalence-Based Estimated Adult/Adolescent HIV Continuum of Care  
by Age on December 31, 2017, 2017



# People Living with HIV with Suppressed Viral Load, 2017

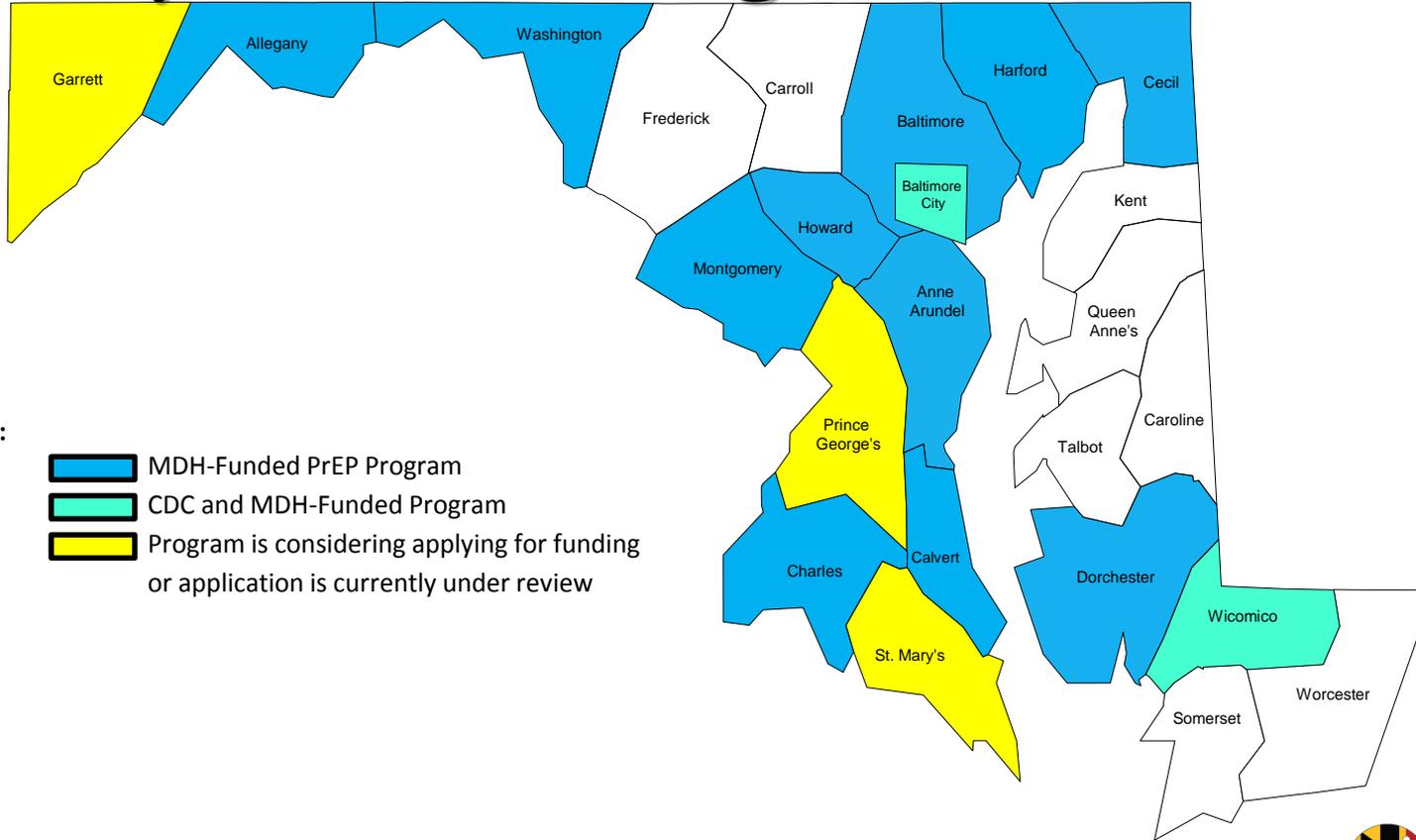




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**Protect** people at risk for HIV using potent and proven prevention interventions, including PrEP, a medication that can prevent HIV infections.

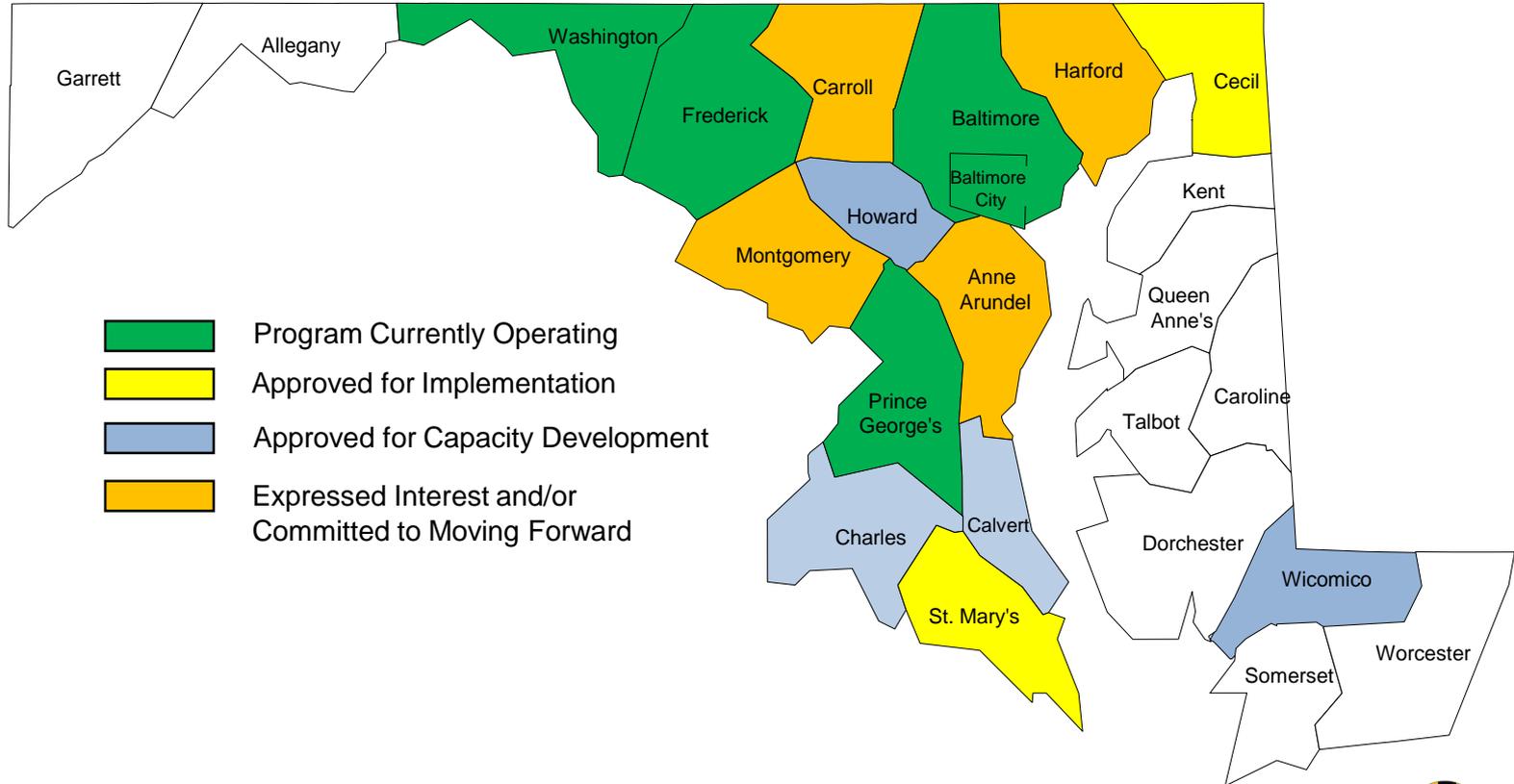
# Maryland PrEP Programs



Key:

-  MDH-Funded PrEP Program
-  CDC and MDH-Funded Program
-  Program is considering applying for funding or application is currently under review

# Maryland Syringe Services Programs



# Indiana Outbreak

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Morbidity and Mortality Weekly Report  
May 1, 2015

## Community Outbreak of HIV Infection Linked to Injection Drug Use of Oxymorphone — Indiana, 2015

Caitlin Conrad<sup>1</sup>, Heather M. Bradley<sup>2</sup>, Dita Broz<sup>2</sup>, Swamy Buddha<sup>1</sup>, Erika L. Chapman<sup>1</sup>, Romeo R. Galang<sup>2,3</sup>, Daniel Hillman<sup>1</sup>, John Hon<sup>1</sup>, Karen W. Hoover<sup>2</sup>, Monita R. Patel<sup>2,3</sup>, Andrea Perez<sup>1</sup>, Philip J. Peters<sup>2</sup>, Pam Pontones<sup>1</sup>, Jeremy C. Roseberry<sup>1</sup>, Michelle Sandoval<sup>2,3</sup>, Jessica Shields<sup>4</sup>, Jennifer Walthall<sup>1</sup>, Dorothy Waterhouse<sup>4</sup>, Paul J. Weidle<sup>2</sup>, Hsiu Wu<sup>2,3</sup>, Joan M. Duwve<sup>1,5</sup> (Author affiliations at end of text)

3 reported diagnoses of HIV in a small rural town, upon investigation, were found to be 150+ cases of IDU-associated HIV and HCV

# Prevention of Indiana Outbreak

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## Dynamics of the HIV outbreak and response in Scott County, IN, USA, 2011–15: a modelling study

*Gregg S Gonsalves, Forrest W Crawford*

### Summary

**Background** In November, 2014, a cluster of HIV infections was detected among people who inject drugs in Scott County, IN, USA, with 215 HIV infections eventually attributed to the outbreak. This study examines whether earlier implementation of a public health response could have reduced the scale of the outbreak.

“... had the interventions deployed in Scott County in 2014-15 [testing, syringe services, HIV clinic] been available earlier, the outbreak might have been substantially blunted.”

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**Respond** rapidly to detect and respond to growing HIV clusters and prevent new HIV infections.



# Cluster Identification

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- Five types of clusters of HIV cases
  - Clusters of diagnoses reported by clinicians
  - Clusters of cases with named partners identified from partner services interviews
  - Co-infections with other disease outbreaks (Hepatitis A, Shigella, Tuberculosis)
  - Geospatial (time-space) clusters identified using epidemiological data
  - Sequence-linked clusters identified using results from genotypic resistance tests
- Can identify networks of people with active transmission of HIV

# Importance of Clusters

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- The overall U.S. HIV transmission rate was 4 new HIV diagnoses per 100 person-years of people living with diagnosed HIV infection
- CDC analyzed the first 13 identified sequence-linked HIV clusters in the U.S.
- Among the sequence-clusters, the transmission rate ranged from 21 to 132 per 100 person-years with a median of 44 per 100 person-years
- **Clusters had a transmission rate 11 times that of the average**
- France, et al. CROI, March 2018.

# Cluster Response

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- Clusters are a way to target data-to-care (D2C) activities and other services to communities at greatest risk
- Three level response:
  - Cases – link to services, move to viral suppression
  - Contacts – screen for HIV, treat for HIV or provide PrEP
  - Community – identify social networks, provide resources as needed
- Prioritize people in clusters and communities with clusters for interventions
- Have responded to 45 clusters since the Indiana outbreak (4 years)

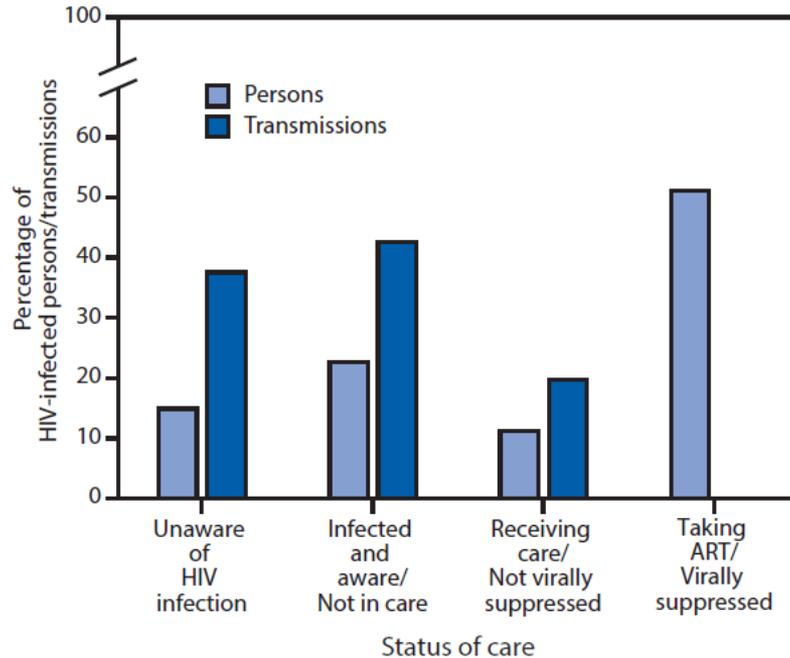


**HIV HealthForce** will establish local teams committed to the success of the Initiative in each jurisdiction.

Awaiting more details (maybe gone?) ...

# HIV Transmission

FIGURE 1. Percentage of persons\* with human immunodeficiency virus (HIV) infection and percentage of transmissions along the continuum of HIV care<sup>†</sup> — United States, 2016<sup>§,¶</sup>



Virally suppressed people do not transmit HIV

43% of transmissions are attributable to the 23% of people living with diagnosed HIV infection and not in care

34% of transmissions are attributable to the 14% of people living with undiagnosed HIV infection



**Maryland Department of Health  
Prevention and Health Promotion Administration**

**<https://phpa.health.maryland.gov>**